REMARKS

Claims 1-27 are currently pending in the subject application and are presently under consideration. Claims 1, 20 and 27 have been amended as shown on pp. 2, 4 and 5 of the Reply. The below comments present in greater detail distinctive features of applicants' claimed invention over the cited art that were conveyed to the Examiner over the telephone on July 18, 2007.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I.   **Rejection of Claims 1-14, 17-21 and 27 Under 35 U.S.C. §102(e)**

Claims 1-14, 17-21 and 27 stand rejected under 35 U.S.C. §102(e) as being anticipated by Bigus *et al.* (US 2004/0083454). It is respectfully submitted that this rejection is improper for at least the following reasons. Bigus *et al.* does not disclose or suggest each and every aspect set forth in the subject claims.

> A single prior art reference anticipates a patent claim only if it *expressly or inherently describes each and every limitation set forth in the patent claim*. *Trintec Industries, Inc. v. Top-U.S.A. Corp.,* 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002); *See Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The *identical invention must be shown in as complete detail as is contained in the ... claim*. *Richardson v. Suzuki Motor Co.,* 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

Applicants' claimed subject matter relates to a rules definition language (RDL) that facilitates authoring rules for concurrent processing. The RDL includes statements that allow a rule to be broken down into one or more instructions, and processing these instructions asynchronously to provide efficient use of computer resources. Bigus *et al.* does not teach or suggest these novel aspects.

Bigus *et al.* relates to a rule-based programming language comprising a single rule language supporting a plurality or rulesets, an object-oriented framework that compiles the rulesets into a collection of framework objects and one or more pluggable inference engines for processing the collection of framework objects. Each framework object is a rule block comprising rules, wherein the ruleblock specifies an inference engine and each rule is a single declarative statement. (*See* page1, [0017]). ***Bigus et al. does not teach or suggest***

decomposition of this statement. Furthermore, the rule-based language is a collection of declarative and procedural statements that can be actively interpreted or processed by an inference engine. These statements, however, are executed as a whole such that an engine would employ computer resources to evaluate an entire statement before attempting to evaluate the next statement. Thus, Bigus *et al.* is silent with regard to decomposition of each statement into a number of smaller instructions that are executed asynchronously.

Independent claim 1 recites composing a rule such that *the rule can be decomposed into a subset of instructions that are processed asynchronously* to facilitate at least one of testing assertions, enforcing constraints using runtime information, making inferences, performing correlation, or communicating results of dynamic tests to other components, *the rule executed concurrently with one or more disparate rules.* In particular, a rule can be broken down into one or more instructions, and processing these instructions asynchronously provides efficient use of computer resources. Further, execution flow is carefully studied and planned to prevent infinite looping. Once processed into the instructions, results thereof can be passed among the instructions to facilitate process completion of the rule. (*See* page 2, lines 11-17). Additionally, the rules themselves can be executed concurrently. Bigus *et al.* fails to teach these novel aspects.

Independent claim 20 recites a method for authoring rules for *concurrent processing*, comprising, composing a rule of one or more statements that facilitate *decomposing the rule into a subset of instructions that are processed at least one of asynchronously or out-of-order.* Specifically, a first rule authored in the RDL is passed into a translator component that decomposes the first rule in accordance with the RDL statements into a plurality of instructions. The RDL provides the capability such that the instructions are decomposed into a format that facilitates asynchronous processing thereof. Thus, the RDL provides a programming mechanism that facilitates more efficient asynchronous processing by the rules engine such that system resources are not overly burdened, as can occur in traditional systems that inefficiently capture system resources for processing rules sequentially. Furthermore, multiple rules can be authored in the RDL and, accommodated for translation and parallel processing. (*See* page 5, lines 28-31 to page 6, lines 1-8). Bigus *et al.* is silent with respect to these novel aspects.

Independent claim 27 recites a method of *authoring rules for concurrent processing*, the method comprising, composing a rule of one or more statements that *facilitate decomposing the rule into a subset of instructions that are independently scheduled for out-of-order execution*

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representative of an infinite loop. In particular, once a rule is decomposed into smaller instructions, each of these is independently scheduled for execution. Instructions which need output of previous instructions are segregated, and messages are generated to deliver the inputs to these dependent instructions. They in turn generate output messages for their own dependents, and so on, until the logic has completed. The net result is that the natural model for defining continuous operations, the "infinite loop" is encouraged and supported by the system. (*See* page 2, lines 18-24). Bigus *et al.* does not teach or suggest the aspects discussed *supra*.

In view of at least the foregoing, it is readily apparent that Bigus *et al.* merely teaches a method to execute each rule as a whole and fails to disclose a method to facilitate out-of-order execution of instructions obtained by decomposing a rule. Furthermore, Bigus *et al.* does not teach concurrent processing of rules and does not anticipate or suggest the subject invention as recited in claims 1, 20 and 27 (and claims 2-14, 17-19, 21 and 27 that depend there from). Therefore, it is respectfully requested that this rejection be withdrawn.

II.   Rejection of Claim 15 Under 35 U.S.C. §103(a)

Claim 15 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bigus *et al.* (US 2004/0083454). It is respectfully submitted that this rejection is improper for at least the following reasons. Bigus *et al.* does not disclose or suggest each and every aspect set forth in the subject claim.

Claim 15 depends on independent claim 1. As discussed *supra*, Bigus *et al* does not disclose a system that composes a rule, which can be decomposed into a subset of instructions that are processed asynchronously to facilitate at least one of testing assertions, enforcing constraints using runtime information, making inferences, performing correlation, or communicating results of dynamic tests to other components, such that, the rule can be executed concurrently with one or more disparate rules, and thus fails to teach each and every aspect recited by independent claim 1. Accordingly, withdrawal of this rejection is respectfully requested.

III.   Rejection of Claims 16 and 22-26 Under 35 U.S.C. §103(a)

Claims 16 and 22-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bigus *et al.* (US 2004/0083454) in view of Graf (US 6,212,581). It is respectfully submitted that

this rejection is improper for at least the following reasons. Bigus *et al.* either alone or in combination with Graf, does not teach or suggest every feature of the subject claims.

> To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *See* MPEP §706.02(j). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *See In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (emphasis added).

Claim 16 and 22-26 depend on independent claims 1 and 20. Applicants' claimed subject matter relates to a rules definition language that authors a rule by decomposing it into a plurality of instructions, which are executed asynchronously to avoid over burdening of system resources. Furthermore, the rule can be concurrently executed with one or more disparate rules. As discussed above, Bigus *et al.* does not disclose or suggest each and every aspect of the subject claims. In particular, Bigus *et al.* fails to recite the asynchronous processing of instructions that are obtained by decomposition of a rule and the concurrent processing of rules.

Graf merely relates to a system and method for automatically managing a group of computers by automatically gathering data, storing the data, analyzing the stored data to identify specified conditions and initiate automated actions to respond to the detected conditions and does not remedy the aforementioned deficiencies with respect to independent claims 1 and 20.

Bigus *et al.* alone or in combination with Graf fails to teach or suggest all features of applicants' specification as recited in independent claims 1 and 20 (and claims 16 and 22-26 that depend therefrom), and thus fails to make obvious the claimed invention. Therefore, it is respectfully requested that this rejection be withdrawn.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP520US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

　/Himanshu S. Amin/　
Himanshu S. Amin
Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731